APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,478	03/17/2004	Yih-Kuen Tsay	USP2364T-TP010-NTU	5502

30265 7590 10/04/2006	EXAMINER
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ART UNIT	PAPER NUMBER
2167	

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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/803,478	TSAY ET AL.
	Examiner	Art Unit	
	Susan F. Rayyan	2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 March 2004*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *3/17/2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-20 are pending.

Claim Objections

. 2.   Claims 1-8 are objected to because of the following informalities: **Each claim begins with a capital letter and ends with a period. Periods may not be used elsewhere in the claims except for abbreviations.** Appropriate correction is required.

MPEP 608.01(m) [R-3]   Form of Claims

The claim or claims must commence on a separate physical sheet or electronic page and should appear after the detailed description of the invention. Any sheet including a claim or portion of a claim may not contain any other parts of the application or other material. While there is no set statutory form for claims, the present Office practice is to insist that each claim must be the object of a sentence starting with "I (or we) claim," "The invention claimed is" (or the equivalent). If, at the time of allowance, the quoted terminology is not present, it is inserted by the Office of Patent Publication. **Each claim begins with a capital letter and ends with a period. Periods may not be used elsewhere in the claims except for abbreviations.** See Fressola v. Manbeck, 36 USPQ2d 1211 (D.D.C. 1995). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation, 37 CFR 1.75(i). There may be plural indentations to further segregate subcombinations or related steps.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

Claims 1, 3-16 are rejected under 35 U.S.C. 103(a) as being unpatentable

over US Patent Number 6,704,728 issued to Jane Wen Chang et al ("Chang") and

US Patent Publication 2004/0039734 issued to Douglas Russell Judd et al

("Judd").

As per independent claim 1 Chang teaches:

A sequence based indexing and retrieval method for text documents (Abstract),

comprising the steps of:

(a) generating a query token sequence, having at least a query token, from a query

submitted by a user (column 2, lines 56-67);

(b) generating at least a representative token sequence, having at least a document

token, from each of said text documents that contain at least one token of said query

token sequence (column 9, lines 49-60);

Chang does not explicitly teach measuring a similarity between each of said

representative token sequences and said query token sequence by: (c.1) determining a

token appearance score by measuring a token appearance of said representative token

sequence with respect to said query token sequence; (c.2) determining a token order

score by measuring a token order of said representative token sequence with respect to said query token sequence; and (c.3) determining a token consecutiveness score by measuring a token consecutiveness of said representative token sequence with respect to said query token sequence; and (d) retrieving said text documents in responsive to said similarity of said representative token sequence with respect to said query token sequence with a ranking order in accordance with said token appearance score, said token order score, and said token consecutiveness score, provided that for a document with two representative token sequences, its similarity is determined by the representative token sequence with a higher score.

Judd does teach these measuring a similarity between each of said representative token sequences and said query token sequence by:

(c.1) determining a token appearance score by measuring a token appearance of said representative token sequence with respect to said query token sequence (paragraphs 56,58,68, as matching search terms);

(c.2) determining a token order score by measuring a token order of said representative token sequence with respect to said query token sequence (paragraph 26, lines 7-9 and paragraph 67 and desired search terms in same order are generally ranked higher);

(c.3) determining a token consecutiveness score by measuring a token consecutiveness of said representative token sequence with respect to said query token sequence (paragraph 57 and paragraph 64, as distance between matching search terms);

(d) retrieving said text documents in responsive to said similarity of said

representative token sequence with respect to said query token sequence with a

ranking order in accordance with said token appearance score, said token order score,

and said token consecutiveness score, provided that for a document with two

representative token sequences, its similarity is determined by the representative token

sequence with a higher score (paragraph 10) to help users locate a desired document.

It would have been obvious to one of ordinary skill in the art at the time of the invention

to modify Chang with determining a token order score, determining a token appearance

score, determining a token consecutiveness score to help users locate a desired

document at paragraph 8.

As per claim 3, same as claim arguments above and Judd teaches:

wherein said weight of said query token in said query token sequence is measured by

determining a token frequency of said query token in said text documents (paragraph

70).

As per claim 4,5, same as claim arguments above and Judd teaches:

determining a length of the longest common subsequence of said representative token

sequence and said query token sequence, determining a length of said representative

token sequence, determining a length of said query token sequence, and outputting

said token order score of said token order by calculating a fraction of said length of said

longest common subsequence divided by an average sum of said length of said

representative token sequence and said length of said query token sequence

(paragraph 70).

As per claim 6,7,8 same as claim arguments above and Judd teaches:

determining a relative distance between a positional differentiation of each adjacent

document tokens and a positional differentiation of said adjacent document tokens in

said query token sequence, and (c.3.2) outputting said token consecutiveness score of

said token consecutiveness by calculating a fraction of a sum of the inverses of said

relative distances divided by the number of pairs of adjacent tokens, which equals the

length of said representative token sequence less one(paragraph 56-paragraph 64).

As per claim 9, same as claim arguments above and Judd teaches:

wherein said similarity of said representative token sequence is calculated with respect

to said query token sequence by summing said token appearance score, said token

order score, and said token consecutiveness score, wherein said ranking order of said

text documents is determined by a weighted sum of said token appearance score, said

token order score, and said token consecutiveness score of each of said representative

token sequences of said text documents(paragraphs 56,58,68, as matching search

terms, paragraph 26, lines 7-9, paragraph 67as desired search terms in same order are

generally ranked higher, paragraph 57 and paragraph 64, as distance between

matching search terms).

As per claim10,11 same as claim arguments above and Judd teaches:

further comprising a step of selecting at least a candidate document from said text

documents, wherein one of said text documents is selected to be said candidate

document when said text document contains at least one token of said query token

sequence (paragraph 55).

As per claim 12,13 same as claim arguments above and Judd teaches:

further comprising a step of consulting an index of said text documents to establish said

candidate document, wherein tokens that also appear in the query token sequence are

collected to form a document token sequence for each document and the two longest

segments of said document token sequence are selected as representative token

sequences wherein the positional differentiation of each adjacent document tokens is no

larger than a predetermined positioning value while said corresponding text document is

selected as the said candidate document (paragraph 50, indexed documents and

paragraph 57, search term proximity).

As per claim 14, 15,16 same as claim arguments above and Judd teaches:

further comprising a step of retaining said candidate document to be used for measuring

said similarity with respect to said query token sequence, wherein the said candidate

document is retained when said candidate document contains a token that has a weight

no less than a predetermined fraction of the total weight of query tokens (paragraph 55).

Claims 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Number 6,704,728 issued to Jane Wen Chang et al ("Chang") and US Patent Publication 2004/0039734 issued to Douglas Russell Judd et al ("Judd") in view of US Patent Publication 2003/0028520 issued to Shamim A. Alpha et al ("Alpha").

As per claim 2, same as claim arguments above and Chang and Judd teach , calculating a sum of the weights of the query tokens that appear in said representative token sequence and outputting said token appearance score of said token appearance by calculating a fraction of said sum divided by the total weight of all query tokens (paragraph 10). Chang and Judd do not explicitly teach consulting an index of said text documents to determine the weight of each token in said query token sequence. Alpha does teach this limitation to improve query response time and improve search results. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Chang ad Judd with consulting an index of said text documents to determine the weight of each token in said query token sequence to improve query response time and improve search results (Abstract).

Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Number 6,704,728 issued to Jane Wen Chang et al ("Chang") and US Patent Publication 2004/0039734 issued to Douglas Russell Judd et al ("Judd") in view of Phillip Andre Bertolus et al ("Bretolus").

As per claim 17,18,19,20 same as claim arguments above and Chang and Judd do not explicitly teach wherein said text document contains Chinese characters, English words, numbers, punctuations, and symbols as said document tokens. Bertolus does teach this limitation at paragraph 38 to retrieve and index information on a network. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Chang and Judd with text document contains Chinese characters, English words, numbers, punctuations, and symbols as said document tokens to retrieve and index information on a network (paragraph 3).

Contact Information

4.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Susan Rayyan whose telephone number is (571) 272-

1675. The examiner can normally be reached M-F: 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone

number for the organization where this application or proceeding is assigned is

703-872-9306.

Information regarding the status of an application may be obtained from

the Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR

only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Susan Rayyan

September 28, 2006

JOHN COTTINGHAM
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